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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,316	02/20/2001	Simone Masetti	PETR/SF/5608 US-B	2019
466	7590	01/07/2004	EXAMINER	
YOUNG & THOMPSON			BOYD, JENNIFER A	
745 SOUTH 23RD STREET 2ND FLOOR				
ARLINGTON, VA 22202			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/785,316	MASETTI, SIMONE
Examiner	Art Unit	
Jennifer A Boyd	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 October 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 23-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 23-45 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) Interview Summary (PTO-413) Paper No(s) _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Response to Amendment

1. The Request for Continued Examination, Amendments and Accompanying Remarks, filed October 6, 2003, have been entered and carefully considered. In view of Applicant's Amendments and Arguments, the Examiner withdraws the 35 U.S.C. rejection of claims 23 – 26, 29, 39 and 42 - 44 as being anticipated by Van Kerrebrouck (US 6,066,388) as detailed in paragraph 4 of the previous Office Action dated June 5, 2003. In view of Applicant's Amendments and Arguments, the Examiner withdraws the rejection of claims 27 – 28 and 30 - 38 and 41 under 35 U.S.C. 103(a) as being unpatentable over Van Kerrebrouck (US 6,066,388) as detailed in paragraph 5 of the previous Office Action dated June 5, 2003. After an updated search, the Examiner has found additional prior art which renders the invention as currently claimed unpatentable for reasons herein below.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 23, 25 – 26, 29 and 42 – 45 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Childs et al. (US 6,357,137).

Childs is directed to a non-woven fabric for imparting fabric treatment to clothing (Title).

As to claims 23 and 42 - 44, Childs teaches a nonwoven fabric, preferably made of polyester, comprising fibers having at least two different deniers that differ in denier by at least about 2 (column 1, lines 33 – 40). Childs teaches that at least one fiber has a denier equal to or below about 8 and the other fiber having a denier of at least about 8 (column 1, lines 37 – 43). Therefore, in one embodiment, one fiber can have a denier of 1 and the other fiber has a denier of 8 or higher (column 1, lines 37 – 43), resulting in a ratio of 8:1 or higher. Childs teaches that the fibers in the nonwoven fabric can be bonded by means of hydroentanglement (column 3, lines 45 – 50). It should be noted that Childs teaches using the nonwoven fabric in a dryer by tumbling damp clothing with the nonwoven fabric (column 3, lines 55 – 60) which would impart Applicant's "rubbing".

As to claims 25 and 26, Childs teaches when making the multi-denier substrate, the filaments, each of which typically forms one layer, are applied in separate stages (column 3, lines 18 – 24). For example, Childs teaches applying 25% by weight of 6 denier fiber followed by 25% by weight of 12 denier fiber, 25% by weight of 12 denier fiber, and finally 25% by weight of 6 denier fiber, creating a "sandwich" of 6/12/12/6 denier fibers as the substrate (column 3, lines 18 – 25). Therefore, the two surface layers are 100% of the lower denier fiber, meeting the requirements of at least 3% of the surface as required by claim 25 and at least 50% of the surface as required by claim 26.

As to claim 29, Childs teaches that the fibers can comprise nylon or polyester (column 1, lines 33 – 40). It is known in the art that nylon is a polyamide.

As to claim 23, 44 and 45, although Childs does not explicitly teach the claimed electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claims 23 and 44 and the finest of the plural fibers vibrate when the plural finest fibers rub inside the interspaces remaining empty between largest ones of the plural fibers to develop the electrostatic charge as required by claim 45, it is reasonable to presume that an electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claims 23 and 44 and the finest of the plural fibers vibrate when the plural finest fibers rub inside the interspaces remaining empty between largest ones of the plural fibers to develop the electrostatic charge as required by claim 45 is inherent to Childs. Support for said presumption is found in the use of like materials (i.e. a nonwoven fabric comprising polyester or polyamide fibers made by a hydroentanglement process comprising fibers of at least 2 different deniers with a denier ratio from 7:1 to 11:1) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of an electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claims 23 and 44 and the finest of the plural fibers vibrate when the plural finest fibers rub inside the interspaces remaining empty between largest ones of the plural fibers to develop the electrostatic charge as required by claim 45 would obviously have

been present once the Childs product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

5. Claims 23, 39 and 40 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pereira et al. (US 6,001,751).

Pereira is directed to a nonwoven fabric of multi-length and multi-denier fibers and absorbent articles formed therefrom (Title).

As to claim 23, Pereira teaches a nonwoven fabric formed by a mixture of fibers having more than one denier with the fibers having a denier between 1 and 10 (column 3, lines 1 – 10). Therefore, in one embodiment, one fiber can have a denier of 10 and the other fiber can have a denier of 1 (column 3, lines 1 – 12), resulting in a ratio of 10:1. Pereira teaches that suitable fibers include staple synthetic fibers such as acrylic, nylon (polyamide), polyester and polypropylene (column 3, lines 55 – 60). Pereira teaches that the nonwoven fabric may be formed by conventional process such as by spunlacing (column 4, lines 60 – 67).

As to claim 39, Pereira teaches the use of other layers in combination with the nonwoven material (column 5, lines 44 – 50).

As to claim 40, Pereira teaches the use of bi-component fibers in the nonwoven (column 3, lines 60 – 67).

As to claim 23, although Pereira does not explicitly teach the claimed electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claim 23, it is reasonable to presume that an electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against

another one of the plural fibers having a different denier as required by claims 23 is inherent to Pereira. Support for said presumption is found in the use of like materials (i.e. a nonwoven fabric of acrylic, polyamide, polyester or polypropylene fibers made by a spunlace process comprising fibers of at least 2 different deniers with a denier ratio from 7:1 to 11:1) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of an electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claim 23 would obviously have been present once the Childs product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

6. Claims 23 and 24 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Groten et al. (US 5,970,583).

Groten is directed to a nonwoven lap of very fine continuous filaments (Title).

As to claims 23 and 24, Groten teaches a nonwoven lap of continuous filaments obtained by means of a direct controlled spinning process and formed, after napping, of longitudinally separable composite filaments, characterized in that the composite filaments have a filament number between 0.3 dtex and 10 dtex and each are formed of at least three elementary filaments having a filament number between 0.005 dtex (0.0045 denier) and 2 dtex (1.8 denier) (column 1, lines 40 – 55) as required by claim 24. Therefore, in one embodiment, one fiber can have a denier of 1 (1.11 dtex) and the other fiber can have a denier of 0.14 (0.0156 dtex), resulting in a ratio of 7:1. In another embodiment, one fiber can have a denier of 1.5 (1.67 dtex) and the other fiber can have a denier of 0.14 (0.0156 dtex). Groten teaches that the composite filaments are at

least partially separated into their elementary filaments during the course of bonding and consolidation (column 2, lines 40 – 50). Groten teaches that the filaments are bonded by mechanical means such as by pressurized streams of fluid (column 4, lines 14 – 20). The Examiner equates the “bonding by pressurized streams of fluid” to the hydroentangling/spunlacing process. According to *Complete Textile Glossary* by Celanese Acetate, hydroentangling is a process for forming a fabric by mechanically wrapping and knotting fibers in a web through the use of high-velocity jets or curtains of water. Groten teaches that the nonwoven can comprise polyester, polyamide, or polyolefin filaments (column 2, lines 60 – 69).

As to claims 23, although Groten does not explicitly teach the claimed electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claim 23, it is reasonable to presume that an electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claims 23 is inherent to Groten. Support for said presumption is found in the use of like materials (i.e. a nonwoven fabric of polyamide, polyester or polyolefin fibers made by a hydroentanglement process comprising fibers of at least 2 different deniers with a denier ratio from 7:1 to 11:1) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of an electrostatic charge is imparted to the plural fibers when one of the plural fibers rubs against another one of the plural fibers having a different denier as required by claim 23 would obviously have been present once the Groten product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Claim Rejections - 35 USC § 103

7. Claims 27 – 28, 30 – 38 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groten et al. (US 5,970,583).

As to claims 27 and 30 – 37, Groten discloses the claimed invention except for a density of the material is about 0.6 g/cm³ as required by claim 27; a composition of 90% of 1.5 denier, as required by claim 30, or 1 denier, as required by claim 31, polyester fibers, and 10% of 0.14 denier polyester fibers as required by claims 30 and 31; a composition of 80% of 1.5 denier, as required by claim 32, or 1 denier, as required by claim 33, polyester fibers, and 20% of 0.14 denier polyester fibers as required by claims 32 and 33; a composition of 70% of 1 denier polyester fibers and 30% of 0.14 denier polyester fibers as required by claim 34; a composition of 50% of 1 denier and 50% of 0.14 denier polyester fibers as required by claim 35; a composition of 50% of 1.5 denier, 30% of 1 denier and 20% of 0.14 denier as required by claim 36 and a composition of 50% of 1.5 denier, 30% of 0.8 denier and 20% of 0.14 denier as required by claim 37. It should be noted that the percentage composition of the different plural fibers and density of the material are result effective variables. As the composition comprises a higher percentage of finer denier fibers, the material becomes more flexible, porous and lightweight. As the density increases, the capacity to acquire electrostatic charge decreases. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a filter material as described above, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been

motivated to optimize the proportions of fibers and the density used in order to have a flexible and lightweight with maximized electrostatic capacity to take-up dirt particles.

As to claims 28 and 41, although Groten does not explicitly teach the electrostatic charge is at least one volt as required by claim 28 and electrostatic charge varies from 1.22 to 3.23 volt as required by claim 41, it is reasonable to presume that an electrostatic charge is at least one volt as required by claim 28 and electrostatic charge varies from 1.22 to 3.23 volt as required by claim 41 is inherent to Groten. Support for said presumption is found in the use of like materials (i.e. a nonwoven fabric of polyamide, polyester or polyolefin fibers made by a hydroentanglement process comprising fibers of at least 2 different deniers with a denier ratio from 7:1 to 11:1, in particular, a nonwoven with the specified percent composition and denier of claims 30 - 37) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of at least one volt as required by claim 28 and electrostatic charge varies from 1.22 to 3.23 volt as required by claim 41 would obviously have been present once the Groten product is provided.

Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

As to claim 38, the limitations are not given any patentable weight because they are process limitations which do not have any impact on the characteristics of the final product.

Response to Arguments

8. Applicant's arguments with respect to claims 23 – 44 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0994.

Jennifer Boyd
Jennifer Boyd
December 17, 2003

Terrel Morris
TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700